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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/629,624

07/30/2003

Naoki Shutoh

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12/23/2008

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ALEXANDRIA, VA 22314

EXAMINER

PHASGE, ARUN S

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

12/23/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/629,624	Applicant(s) SHUTOH ET AL.	
	Examiner Arun S. Phasge	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-16 and 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claim 1 and new claim 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sportouch in view of Shen of record for reasons of record.

A thermoelectric element having the formula disclosed in Sportouch formed by the method of Shen teaching the sintering of the compound powders to form a thermoelectric material would inherently produce the claimed range of figure-of-merit ZT as claimed.

Therefore, the claims are rejected.

Claims 2-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sportouch in view of Shen as applied to claims above, and further in view of Hohl of record for reasons of record.

Claim 17 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Sportouch in view of Shen as applied to claims above, and further in view of Bell of record for reasons of record.

Response to Arguments

Applicant's arguments and declaration filed 11/14/08 have been fully considered but they are not persuasive.

With respect to the Shen reference applicants argue and provide a "Declaration under 37 C.F.R. § 1.132, which explains that the dimensionless figure-of-merit ZT value

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at 300° K of Shen is 0.04, which is less than 0.05. The Declaration states that fine grain sized Ti powder, Zr powder, Hfpowder, Ni powder, and Sn powder are prepared as raw materials, and when using these raw material metallic powders, a sintered body having the same composition as shown in Example I-9 of the present invention is obtained by the method of Shen. Using this composition, the dimensionless figure of merit ZT of the obtained sintered body at a temperature of 300° K is then calculated in the same manner as described in the Applicants' embodiments, and the measured dimensionless figure of merit ZT value is 0.04."

The Shen reference does not sinter fine grain sized Ti powder, Zr powder, Hf powder, Ni powder and Sn powder as raw material, rather according to the reference the individual metal powders are placed in a crucible and heated to form single-phase compounds, then the compound powders were consolidated by a sintering technique (see page 166 second column under **Experimental Techniques**).

Accordingly, since the comparative sintering process used in the declaration is significantly different from the Shen reference, the findings of the declaration are not given patentable weight.

Therefore, the claims stand rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/
Primary Examiner, Art Unit 1795

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